CLAIMS

We claim:

1. A reticle for use in a photolithographic projection system, the reticle comprising a pattern of alignment attributes with known deviations from the pattern encoded onto the reticle.

2. A reticle as defined in Claim 1, wherein the known deviations are imaged in predetermined locations on an exposed recording media and appear in a predetermined order when the projection system is operated in accordance with a properly ordered job deck.

3. A reticle as defined in Claim 1, wherein the deviations include placement errors in the pattern of alignment attributes.

4. A reticle as defined in Claim 3, wherein the placement errors include a removed portion of an attribute, located at the same position of the pattern of alignment attributes, inside each field point array.

5. A reticle as defined in Claim 4, wherein the removed portion of the pattern is asymmetric with respect to rotation of the pattern.

6. A reticle as defined in Claim 1, wherein the deviations include removal of two adjacent portions of an attribute that are orthogonal to each other.

7. A reticle as defined in Claim 6, wherein the two adjacent portions of the attribute form an L shape.

8. A reticle as defined in Claim 1, wherein the deviations include x-shift offsets in the pattern.

9. A reticle as defied in Claim 1, wherein the deviations include y-shift offsets in the pattern.

10. A reticle as defined in Claim 1, wherein the line widths of the attributes are varied as a function of their location in the pattern.

11. A reticle as defined in Claim 1, wherein the projection system is a photolithographic stepper.

12. A reticle as defined in Claim 1, wherein the projection system is a photolithographic scanner.

13. A reticle as defined in Claim 1, wherein the projection system is an electron beam imaging system.

14. A reticle as defined in Claim 1, wherein the projection system is a direct write tool.

15. A reticle as defined in Claim 1, wherein the projection tool is an extreme ultra-violet photolithographic tool.

16. A reticle as defined in Claim 1, wherein the projection tool is an x-ray imaging system.

17. A reticle as defined in Claim 1, wherein the projection tool is a scapula tool.

18. A method for the proper identification of photolithographic overlay data, the method comprising:

providing a reticle having a plurality of alignment attributes that are encoded into a pattern that includes known deviations;

imaging the reticle alignment attribute pattern onto a recording media;

developing the image of the alignment attribute pattern on the recording media;

measuring the alignment attribute pattern on the recording media with a programmed overlay tool; and

determining if the overlay tool measured the alignment attribute pattern in a correct order by identifying the recording media locations of the known deviations within the measured pattern and comparing these locations to the encoded pattern.

19. A method as defined in Claim 18, wherein the deviations include placement errors within the pattern.

20. A method as defined in Claim 18, wherein the deviations include removing a portion of an attribute at the same position of the pattern in each field point array.

21. A method as defined in Claim 18, wherein the deviations include removal of two adjacent portions of an attribute that are orthogonal to each other.

22. A method as defined in Claim 18, wherein the deviations include x-shift offsets.

23. A method as defined in Claim 18, wherein the deviations include y-shift offsets.

24. A method as defined in Claim 18, wherein line widths of the alignment attributes are varied as a function of their location in the pattern.

25. A method as defined in Claim 18, wherein the recording media is a positive resist coated substrate.

26. A method as defined in Claim 18, wherein the recording media is a negative resist coated substrate.

27. A method as defined in Claim 18, wherein the recording media is an electronic CCD.

28. A method as defined in Claim 18, wherein the recording media is a diode array.

29. A method as defined in Claim 18, wherein the recording media is a liquid crystal.

30. A method as defined in Claim 18, wherein the recording media is an optically sensitive recording device.

31. A method of determining if a machine used to perform overlay measurements is programmed correctly, the method comprising:

providing a reticle with a plurality of alignment attributes that are encoded into a pattern that includes known deviations;

imaging of the reticle onto a recording media;

developing the image of the reticle pattern on the recording media;

measuring the alignment attribute pattern with a programmed overlay tool;

determining if the overlay tool measured the alignment attribute pattern in a correct order by identifying the locations of the deviations within the measured pattern and comparing these locations to a predetermined pattern;

altering a job deck set of instructions so that the locations of the deviations within the measured pattern match the locations in a predetermined pattern.

32. A method for the proper identification of CD data, the method comprising:

providing a reticle with a plurality of alignment attributes that are encoded into a pattern that includes known deviations;

imaging of the reticle onto a recording media;

developing the image of the reticle pattern on the recording media;

programming a CD metrology tool to measure the alignment attribute pattern; and

determining if the overlay tool measured the alignment attribute pattern in a correct order by identifying the locations of the known deviations within the measured pattern and comparing these locations to the encoded pattern.

33. A method as defined in Claim 32, wherein the CD metrology tool is a CD-SEM.

34. A method of determining if a machine used to perform CD measurements is programmed correctly, the method comprising:

providing a reticle with a plurality of alignment attributes that are encoded into a pattern that includes known deviations;

imaging of the reticle onto a recording media;

developing the image of the reticle pattern on the recording media;

measuring the alignment attribute pattern with a programmed CD metrology overlay tool;

determining if the overlay tool measured the alignment attribute pattern in a correct order by identifying the locations of the deviations within the measured pattern and comparing these locations to the encoded reticle pattern;

altering a job deck set of instructions so that the locations of the deviations within the measured pattern match the locations in the encoded pattern.